



By Gracia Puerto and Carol Miles

Vegetable Horticulture Research & Extension Program, Washington State University
Northwestern, Washington Research and Extension Center, Mount Vernon, WA.

g.puertohernandez@wsu.edu; milesc@wsu.edu

<https://vegetables.wsu.edu/sweetpotato/>

OVERVIEW

The simple answer is YES, sweetpotato vines can be fed to livestock! Sweetpotato vines are not just a valuable food crop for humans, they also offer significant nutritional and economic benefits as animal feed. Sweetpotato vines can be used as a supplement or as a replacement for more expensive feed ingredients, making them both resourceful and cost-effective for livestock owners. Feeding sweetpotato vines to animals also reduces agricultural waste and supports more efficient use of farm crops. However, special considerations need to be addressed when sweetpotato vines are used as a primary nutritional source for livestock.

BENEFITS OF FEEDING SWEETPOTATO VINES

Sweetpotato vines can be used as a protein source for livestock. Their crude protein content ranges from 10.82 to 20.58% on dry matter (DM) basis, which meets and exceeds the protein requirement for ruminants (Baba et al. 2017). The crude protein content of the leaves ranges from 26 to 33%, while stems



Figure 1. Highlander cattle and a goat provided sweetpotato vines for the first time.

contain 10 to 14% on DM basis (Ishida 2000; Tsegaye et al. 2024). Sweetpotato vines also have high digestibility (>62%) (Chen et al. 2024) and high moisture content when fed fresh. For example, 100 kg of dried sweetpotato vines can supply 10 to 12 kg of protein (Murugan et al. 2012).

Sweetpotato vines also offer good feeding value due to their relatively moderate neutral detergent fiber (NDF) content, which is 44.84% on dry matter basis (Chen et al. 2024). Fiber is essential for ruminants, as it supports proper rumen function.

Sweetpotato leaves are rich in beta-carotenoids, which serve as precursors for vitamin A. Leaves also contain relatively high levels of riboflavin, ascorbic acid, and folic acid (Woolfe 1992). Mineral content in sweetpotato vines primarily includes calcium, iron, and zinc, with higher concentrations found in fully mature leaves (Woolfe 1992).

For producers already growing sweetpotatoes or with access to sweetpotato vines, feeding them to livestock can be budget-friendly, providing an additional source of nutrition with minimal added cost, unless the vines are further processed.

WAYS TO FEED SWEETPOTATO VINES

A good feed alternative or supplementation must be both nutritious and with a good intake potential. Sweetpotato vines can be fed fresh, wilted, dried, or ensiled. Processing sweetpotato vines can alter their nutritional content. For example, ensiling improves feed efficiency by increasing protein availability through nitrogen conversion during fermentation. It also reduces trypsin inhibitors, which can negatively impact protein digestibility. However, beta-carotenoids and water-soluble vitamins may degrade during processing.

FEEDING CONSIDERATIONS

The amount, form (e.g., fresh, wilted, etc.), and frequency of feeding sweetpotato vines depend on several factors, including the animal's age, breed, production stage, current diet, and metabolism. Initially, it is suggested to expose the animals to the vines to determine desirability and palatability. Then, based on the animal's dietary needs, the optimal amount and form of the feed including sweetpotato vines should be adjusted accordingly. For cattle, small ruminants, and poultry, chopped fresh sweetpotato vines can be mixed with their regular feed. In swine, especially in parts of Asia where energy feeds are limited, a combination of vines and roots is commonly used.

MORE INFORMATION

If you would like to learn more about feeding sweetpotato vines to livestock, please refer to our report on [feeding sweetpotato vines to livestock](#) where we provided a variety of livestock animals with sweetpotato vines for the first time, and they consumed approximately 500 pounds of sweetpotato vines in less than 16 hours, despite the added stress of introducing a new bull into the herd, which is known to affect feed intake.

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2022-38640-37490 through the Western Sustainable Agriculture Research and Education program under project number SW23951. USDA is an equal opportunity employer and service provider. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S.

